Notes on Apparatus and Appliances

A MULTI-PURPOSE WALL UNIT

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The limited wall space available in modern buildings, where the outside walls are replaced by windows, gives wonderful natural light, but makes the task of the physiotherapist who wants to instal various kinds of apparatus rather complicated. I was faced with this problem last year and was fortunate to have the assistance of a carpenter who was prepared to inspect various types of equipment, study its uses, and then design and construct a unit incorporating all necessary equipment but fitting into a small area of solid wall space. The plans (Figure I) illustrate a unit combining wall bars, weights and pulleys and vertical neck traction apparatus. There is

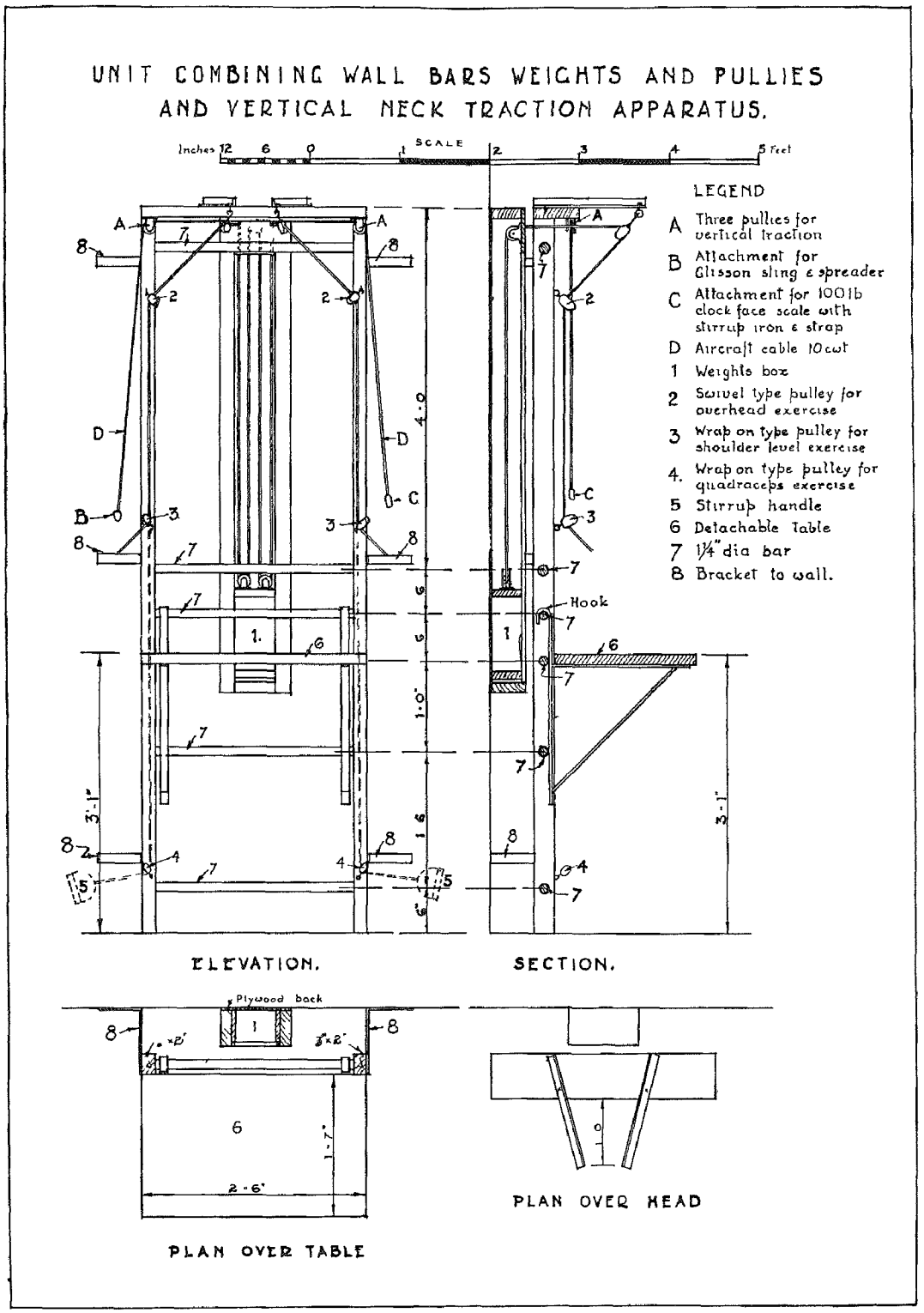
UNIT COMBINING WALL BARS WEIGHTS AND PULLIES AND VERTICAL NECK TRACTION APPARATUS.
Inches 12 6 0 SCALE 1 2 3 4 5 Feet
LEGEND
A Three pullies for vertical traction
B Attachment for Glisson sling & spreader
C Attachment for 100lb clock face scale with stirrup iron & strap
D Aircraft cable 10cwt
1 Weights box
2 Swivel type pulley for overhead exercise
3 Wrap on type pulley for shoulder level exercise
4. Wrap on type pulley for quadraceps exercise
5 Stirrup handle
6 Detachable Table
7 1¼" dia bar
8 Bracket to wall.
Hook
ELEVATION.
SECTION.
Plywood back
6
2-6"
1-7"
PLAN OVER TABLE
PLAN OVER HEAD

FIGURE I.

nothing original about any section of the unit but the combination has proved most efficient in operation as well as economical of space.

DESCRIPTION AND USE OF THE UNIT

The total height of the unit is eight feet, and the width 30 inches. I have limited the number of bars to six, which I find adequate, but more could be added. The unit is attached to the wall with three pairs of mild steel brackets. Mild steel brackets with hooks are used to attach the exercise table to the wall bars. This table, which can be adjusted to three different heights, has a polished surface to use for hand and arm exercises. It is stable so that it may be used as a seat for patients doing quadriceps exercises with the weights and pulleys. The table is easily removed to permit use of the wall bars or traction apparatus.

The weights and pulleys are designed to be used on either side or on both sides together, and can function at three levels according to the exercises to be given. The two lower sets of pulleys are made with one open side so that the ropes can easily be wrapped around the pulleys; the resultant simplicity with which the operation of the weights and pulleys can be altered effects a considerable saving of time. Lead bars form the weights (half-pound, one, two, four, six, eight and ten pounds), so that the weight may be increased by half a pound at a time to a total weight of 31½ lbs. The weight box has a bar fitted across the front to prevent the weights falling out but weights are easily added or subtracted during use.

The traction apparatus is fitted across the front of the unit to which it is attached by a mild steel V-piece to ensure stability. The aircraft cable (10 cwt. breaking strain) is threaded over the pulleys on either end and under the centre pulley to lessen the tension on the cable. On either end of the cable there are large spring clips (similar to the clips on leashes for dogs) which are attached to the glissan spreader and sling on one end and to a 100 lbs. clockface scale, allowing accurate measuring of weight on the other end. When not using the traction apparatus I remove the attachments and clip the cable to the back of the unit to avoid interference with the weights and pulleys.

The use of an ordinary stirrup leather and iron on the hook of the clockface scale enables me to apply the exact amount of traction requested by the doctor and yet leaves both hands free should the patient require quick release or any other adjustment be necessary. Lengthening or shortening the stirrup leather enables me to exert the exact amount of traction without having to move my foot from its position on the lower wall bar; strong traction could be very tiring if the foot were unsupported. When mild traction is desired for a longer period fixed weights can be hooked on to the scale.

CONCLUSION

It is, of course, easier to demonstrate the use of the unit than to explain it, and this I shall be happy to do for those interested. A limited number of detailed plans may be made available on loan.